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Transparency and confidence-building measures in outer space activities

Report of the Secretary-General

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I. Introduction

1. In paragraph 1 of its resolution 60/66, the General Assembly invited all Member States to inform the Secretary-General of their views on the advisability of further developing international outer space transparency and confidence-building measures in the interest of maintaining international peace and security and promoting international cooperation and the prevention of an arms race in outer space.

2. On 13 June 2006, a note verbale was sent to all Member States drawing their attention to paragraph 1 of resolution 60/66 and seeking their views on the matter. The replies received from Canada, China, Cuba, Iraq, Japan, Mexico, Mongolia and the Russian Federation are reproduced in section II below. Any replies subsequently received from other Member States will be issued as addenda to the present report.

II. Replies received from Governments

Canada

[Original: English]
[17 October 2006]

Canada commends the Russian Federation for its initiative in bringing forward General Assembly resolution 60/66 on transparency and confidence-building measures (CBMs) in outer space, and for encouraging a dialogue on this important issue.

Next year will mark the 40th anniversary of the opening for signature of the *Outer Space Treaty* (OST), as well as the 50th anniversary of the launch of SPUTNIK. Discussion of these issues is therefore timely.

Space is a global resource, and is increasingly part of our collective critical infrastructure — from global communication and navigation links to the collection of environmental and natural resource management information. Activities in outer space encompass civil, military and increasingly commercial endeavours that are all consistent with the peaceful uses of outer pace. The exploration, exploitation and sustainable use of outer space should continue to be carried out for the benefit and in the interests of all States. As the *Outer Space Treaty* makes clear, outer space "shall be the province of all mankind".

In order to protect this resource upon which we all increasingly rely, Canada supports the examination of transparency and confidence-building measures in outer space as a complement to existing pursuits within the Conference on Disarmament and the Committee on the Peaceful Uses of Outer Space. Transparency and confidence-building measures can contribute to reduce threat perceptions and help to build trust among nations. They also can facilitate increased international cooperation in outer space among States and thus serve to promote international peace and security.

This paper describes some of the kinds of transparency an confidence-building measures that exist already in international law or in other commitments undertaken by States relating to outer space — or that could potentially have an application to

outer space. While the list is not by any means exhaustive, it nevertheless could assist Member States in their consideration and general discussion of transparency and confidence-building measures in outer space.

Using existing instruments to the full

A number of tools related to transparency and confidence-building measures are already at our disposal. For example, the overall body of existing space law provides an important contribution to building confidence among space actors. States could therefore make the fullest use of provisions available in existing agreements and arrangements.

Transparency and confidence-building measures are some of the key elements of the *Outer Space Treaty (1967)*. For example, Article IX (consultations concerning proposed activities or experiments in space), Article X ("the States Parties to the Treaty shall consider on a basis of equality any requests by other States Parties to the Treaty to be afforded an opportunity to observe the flight of space objects launched by those States"), Article XI (regarding information sharing), and Article XII (reciprocal access to "all stations, installations, equipment and space vehicles on the Moon and other celestial bodies").

Transparency and confidence-building measures are also an integral part of the *Hague Code of Conduct against Ballistic Missile Proliferation* (HCOC). In addition to promoting further voluntary bilateral or regional steps, transparency measures available under the HCOC include:

- Annual declarations outlining Space Launch Vehicle (SLV) policies and launch sites, as well as the number and generic class of SLVs launched during the previous year;
- Pre-launch notification for SLVs and Ballistic Missiles; and
- Extending invitations to international observers to witness launches.

Canada calls on all Member States of the United Nations to subscribe to the HCOC and to fully implement its provisions.

The *Convention on the Registration of Objects Launched into Outer Space* (1975) established a mandatory and uniform registration system for objects launched into outer space. The Convention requires mandatory reporting to the United Nations Secretary-General on issues such as the date and location of the launch, basic orbital parameters after launch, and the recovery date of the spacecraft. Work is currently under way in the COPUOS Legal Subcommittee to review the registration practices of States and international organizations and to adopt a set of best practices/guidelines for registration, including on the types of information to be provided. It is expected that this work will enhance the quality of information provided pursuant to the Convention.

A significant amount of information relating to trends and annual developments related to space is available by researching open sources. The provision of neutral and evidence-based analysis of this information can serve to augment transparency and confidence. In this connection, the *Space Security Index*, developed by the research consortium spacesecurity.org, is an important tool for transparency and awareness building.

Enhancing transparency and confidence-building measures

In addition to ongoing work in the Conference on Disarmament (CD) and the Committee on the Peaceful Uses of Outer Space (COPUOS), there are a number of other confidence-building and transparency measures relating to activities in outer space that could be examined for their potential contribution to enhancing international peace and security:

- *Debris mitigation*. In March 2006 the COPUOS Scientific and Technical Subcommittee received from its Space Debris Working Group draft guidelines aimed at reducing the production of harmful debris in outer space. The draft guidelines, based on work by the Inter-Agency Space Debris Coordination Committee (IADC), were approved for referral to member States for their consent and onward transmission to the COPUOS 2007 Plenary. It is hoped that the guidelines will be adopted at UNGA 62 (Fourth Committee) in 2007.

- The successful negotiation of voluntary guidelines for the mitigation of space debris will help increase the understanding of other space actors' activities in space and thus enhance the sustainable use of outer space in the face of a growing environmental problem. Once adopted, States will be encouraged to voluntarily take measures, through national or other mechanisms — including through national legislation, as appropriate — to ensure that the guidelines are implemented.

- *Space traffic management*. Guidelines to improve space traffic management could also be considered. Such measures could possibly include, inter alia, more detailed pre-launch notifications, notification of orbital change and other manoeuvres that could result in close approaches to other space objects, and a pre-atmospheric re-entry notification regime. Enhanced data sharing on natural space environmental conditions, as well as an improved information-sharing and consultation procedures for collisions, interference and other incidents in space, could also serve to enhance international peace and security. Member States may wish to consider the contribution to space security by a rules-based behaviour regime that defined acceptable conduct by all space-faring States and thus provide confidence through predictability.

- *Moratorium on anti-satellite weapons tests*. The cessation of tests of anti-satellite (ASAT) weapons by the United States and Soviet Union in the 1980s is an important example of voluntary restraint, and a significant confidence-building measure. Other space-faring States could observe similar moratoria.

Improved space object characterizations: States that register space objects in accordance with the *Registration Convention* could give serious consideration to declaring additional information concerning, inter alia, the manoeuvrability and effective irradiated power capabilities of newly registered space objects. This issue could also be considered by the COPUOS Legal Subcommittee in the context of its review of registration practices. Additional information could assist other registrants in computing a harm index that would assess the ability of the newly registered space objects to interfere, damage or destroy other space objects by contact or at a stand-off range.

Low technology cooperative launch monitoring: Space launch vehicles and ballistic missiles generate a considerable amount of noise when they are launched. Exploiting a resurgence of scientific interest in infrasound technology, similar to

that being employed by the provisional Comprehensive Test Ban Treaty Organization, might offer the international community a means to declare and demonstrate compliance with an improved, universal pre-launch notification regime for space launch vehicles and ballistic missiles.

Participation in the cooperative monitoring of the launch events of ballistic missiles and space launch vehicles could help all States gain insight into the intent and capabilities of those States with active rocket programmes. Collective monitoring could therefore help all States combat ballistic missile proliferation by filling knowledge gaps that could otherwise fuel horizontal and vertical ballistic missile arms races.

Ground-based space surveillance: In 1989, France proposed the creation of a space surveillance system, consisting of radar and optical sensors, for the international community to track the trajectory of space objects. This was presented in the Conference on Disarmament (CD/937 and CD/PV.570) and evolved into a proposal to establish an international trajectography centre (UNITRACE).

Given the rapid advances in technology, and easier access to high-quality open source information, the UNITRACE proposal could be revisited and updated. Such an initiative could complement the US-Russian agreement to establish a Joint Early Warning and Data Interpretation Centre and would be consistent with that agreement's envisaged multilateralization. It could also have benefits for commercial satellite operators in terms of providing information to de-conflict satellite launches and close approach orbital trajectories. It would also reinforce the Registration and Liability Conventions.

China

[Original: Chinese]
[18 August 2006]

China supports resolution 60/66, "Transparency and confidence-building measures in outer space activities", adopted at the sixtieth session of the General Assembly. China has consistently opposed the weaponization of outer space and an arms race in outer space, and is of the view that international legal instruments, arrived at through negotiation and having the binding force of law, are the most effective way to prevent the weaponization of outer space and an arms race in outer space. Transparency and confidence-building measures in outer space are transitional steps and a beneficial supplement in the attainment of that goal. At the same time, China is of the view that the most important, practical and realistic outer space confidence-building measures are to refrain from placing weapons in outer space or using or threatening to use military force in outer space. China and the Russian Federation have submitted to the Conference on Disarmament a series of documents, including document CD/1778, "Transparency and confidence-building measures in outer space activities and the prevention of placement of weapons in outer space", in which the foregoing position is fully set forth.

Cuba

[Original: Spanish]
[5 September 2006]

Cuba fully supports General Assembly resolution 60/66, "Transparency and confidence-building measures in outer space activities".

An arms race in outer space would pose a serious threat to international peace and security.

The exploration and use of outer space, including the Moon and other celestial bodies, should be for strictly peaceful means and for the benefit and in the interest of all countries, irrespective of their degree of economic or scientific development.

The space age, begun almost 50 years ago, has been characterized by rapid development in space technology and by growing concern about the dangers inherent to an arms race in outer space.

The General Assembly officially recognized these concerns in the 1978 Final Document of the Tenth Special Session, the first special session devoted to disarmament, and requested that new measures be adopted and international negotiations be held on the issue.

New measures should be examined in the search for agreements to prevent the weaponization of, and an arms race in, outer space.

Given the lack of complete arrangements to prevent an arms race in outer space, it is vital to develop confidence-building measures.

Cuba considers it appropriate and necessary to continue developing international transparency and confidence-building measures in outer space activities in order to maintain international peace and security, promote international cooperation and prevent an arms race in outer space.

The objectives of such measures should be to achieve greater transparency and predictability in space activities in general, through such measures as prior notification, verification and follow-up, thereby contributing to international security.

The various space capabilities of the Member States should be taken into account when studying possible confidence-building measures in outer space.

An important confidence-building measure would be strict respect for the existing agreements on arms limitation and the disarmament of outer space, including bilateral agreements, as well as for the existing legal regime on the use of outer space.

The General Assembly of the United Nations has, in many resolutions supported by Cuba, reaffirmed the importance of confidence-building measures as a means of preventing an arms race in outer space.

General Assembly resolution 60/54, "Prevention of an arms race in outer space", which Cuba also fully supports, reaffirms the importance and urgency of preventing an arms race in outer space and the readiness of all States to contribute to that common objective, in conformity with the provisions of the Treaty on

Principles Governing the Activities of States in the Exploration and Use of Outer Space, including the Moon and Other Celestial Bodies.

All States, in particular those with major space capabilities, should refrain from actions contrary to that objective and to the relevant existing treaties in the interest of maintaining international peace and security and promoting international cooperation.

Cuba believes that the Conference on Disarmament, as the sole multilateral disarmament negotiating forum, has the primary role in the negotiation of a multilateral agreement on the prevention of an arms race in outer space in all its aspects.

The right of all States to explore and use outer space for the benefit and in the interest of all humanity is a universally accepted legal principle.

In the foreseeable future, achieving full autonomy of space capabilities by all States is neither technologically nor economically viable.

Therefore, as the number of States participating in space activities increases, so does the urgency for greater bilateral and multilateral cooperation. Cooperation is an important means of safeguarding outer space for peaceful uses and of ensuring that the benefits of space technology reach all States.

Iraq

[Original: Arabic]
[12 July 2006]

Iraq continues to be of the opinion that it is advisable to further develop international outer space transparency and confidence-building measures in the interest of maintaining international peace and security and promoting international cooperation and the prevention of an arms race in outer space. Iraq also continues to believe that the study by governmental experts on the application of confidence-building measures in outer space (A/48/305) contains many ideas and proposals whose adoption and development consistent with scientific and technical progress would promote confidence-building measures and lead to greater international cooperation for the benefit of humankind and the prevention of an arms race in outer space. This might require the formulation of new internationally accepted legal instruments and principles.

Japan

[Original: English]
[14 September 2006]

Japan's overall guideline on Space Environment Utilization is embodied in "the Basic Strategy for Space Development and Utilization" which was decided upon by the Council for Science and Technology Policy in September 2004. The Ministry of Education, Culture, Sports, Science and Technology (MEXT) is proceeding with research and development activities through the Japan Aerospace Exploration Agency (JAXA) based on the "Long Term Program for Space Activities" adopted by the Space Activities Commission in March 2003.

Under the above-mentioned strategy and plan, Japan makes utmost efforts to increase transparency in Space Environment Utilization activities through such measures as the provision of information to the general public via the Internet and mass media, as well as holding seminars and symposiums for experts and researchers in this field.

Regarding plans for upcoming satellite launches by Japan, transparency is ensured through the publication in the annual White Paper on Science and Technology.

In the area of multilateral cooperation, Japan is actively engaged in the promotion of cooperation through the activities of the United Nations Committee on the Peaceful Uses of Outer Space (COPUOS), the Asia-Pacific Regional Space Agency Forum (APRSAF) hosted by Japan in order to exchange opinions about the international cooperation in space development in the Asia-Pacific region, and the Committee on Earth Observation Satellites (CEOS), which carries out technical coordination and information exchange on earth observation satellite systems. In particular, Japan is endeavouring to establish a system for disaster prevention and crisis management in the Asia-Pacific region. This will allow for the provision and sharing of disaster prevention information among relevant regional States through coordination among space agencies and disaster institutions in the region. Japan is also participating in the International Space Stations (ISS) programme, the largest international cooperation project for space development. Japan closely cooperates with all participating nations in the construction and utilization of the ISS.

In the area of bilateral cooperation, space activities between Japan and the United States are proceeding smoothly under the "Agreement between the Government of Japan and the Government of the United States of America concerning Cross-Waiver of the Liability for Cooperation in the Exploration and Use of Space for Peaceful Purposes". For cooperation with European countries, a close relationship with the European Space Agency (ESA) is maintained through administrative Japan-ESA meetings on an almost annual basis. Moreover, regarding cooperation with Russia, the space cooperation joint meeting is held regularly to promote bilateral cooperation.

Japan believes that these multilateral and bilateral efforts play an important role as measures to increase transparency and promote confidence-building among the countries involved in the area of space environment utilization.

Mexico

[Original: Spanish]
[19 September 2006]

Mexico attaches particular importance to the efforts of the international community to prevent an arms race in outer space and promote international cooperation to ensure that outer space is used for peaceful purposes. It considers it very worthwhile in this context to adopt transparency and confidence-building measures, particularly among States with advanced space technologies.

The 1993 study on the application of confidence-building measures in outer space provided a broad overview of such measures, stressing the importance of reliability, security, openness and predictability in defining them. It should however

be borne in mind that, while the aforementioned study offers a valuable benchmark for discussing this topic, since that time the international context has changed and technology has advanced substantially. A fresh evaluation containing specific recommendations would therefore be highly useful in providing a basis for taking effective steps to foster a cooperative climate of trust.

Mexico urges States members of the Conference on Disarmament to seek agreement on this matter and to remove the risk of an arms race in outer space, stressing that it shares the concern of several countries about the threats hanging over this common heritage of humanity. Mexico hopes that other States with space capabilities will pledge that they will not be the first to deploy any type of arms in outer space.

Mexico emphasizes that transparency and confidence-building measures should be strengthened in this field, taking into account that such measures complement and contribute to disarmament and arms-limitation agreements and are conducive to improved information-sharing among States, which thereby reduce and may even manage to eliminate possible perceptions of risks to their safety.

Mexico reaffirms that the exploration and use of outer space, the Moon and other celestial bodies should serve exclusively peaceful purposes and benefit all countries, irrespective of their degree of economic or scientific development, without jeopardizing the safety of any State, in accordance with the letter and spirit of the 1967 Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, including the Moon and Other Celestial Bodies. Within this framework, confidence-building measures contribute to the development and adoption of commitments that will preserve outer space from an arms race.

Mongolia

[Original: English]
[21 August 2006]

Mongolia views that outer space, being the common heritage of mankind, should be explored and used solely for peace purposes to the benefit of all nations. It supports initiatives aimed at preventing an arms race in outer space and threat or use of force against space objects through adopting a relevant legally binding instrument.

In accordance with General Assembly resolution 60/66, "Transparency and confidence-building measures in outer space activities", Mongolia would like to inform that it *fully supports further developing such transparency and confidence-building measures in the interest of maintaining international peace and security and promoting international cooperation*.

Russian Federation

[Original: Russian]
[19 April 2006]

With reference to the invitation to all States Members of the United Nations contained in General Assembly resolution 60/66, entitled "Transparency and confidence-building measures in outer space activities", the Russian Federation hereby conveys to the Secretary-General its views on the advisability of further developing such measures.

The Russian Federation considers that the world has already acknowledged that transparency and confidence-building measures are a significant component of international law. This situation has been reflected in a number of General Assembly resolutions confirming "the importance of confidence-building measures as a conducive means of ensuring the attainment of the objective of the prevention of an arms race in outer space" and recognizing that "concrete proposals on confidence-building measures could form an integral part" of the relevant international agreements.

Transparency and confidence-building measures are already used in one form or another in several international outer-space agreements. Many such measures are applied by States on their own initiative. However, they are not at present all-embracing in terms either of their coverage of the various types of outer space activity or of the participation of States in their implementation.

The advisability of further developing measures of this kind depends on their expected contribution to promoting the cause of peace, security, international cooperation and prevention of an arms race in outer space.

Transparency and confidence-building measures reduce the risk of a mistaken perception and assessment of another State's military activity in outer space. Although they cannot replace measures for the legal regulation of various armaments in outer space or act as a substitute for monitoring arrangements, they do have the capacity to create the conditions for the formulation of the corresponding legal obligations. The production of recommendations on possible measures of this kind is a simple first step in the direction of strengthening security in outer space. Success in this regard would facilitate agreement on the next steps. Joint work on transparency and confidence-building measures would help to enhance understanding of States' intentions and the situation in outer space. Predictability of the military activities of States in outer space would substantially reduce the likelihood of the emergence of sudden military threats in or from outer space and uncertainty with regard to the strategic situation in outer space and, consequently, the need for States to make early preparations to neutralize such threats. Such measures could thus constitute a transitional stage in the formulation of new international legal agreements on outer space providing for the maintenance of outer space as a zone free of weapons of any kind.

In the light of these considerations the Russian Federation believes it advisable further to develop international outer-space transparency and confidence-building measures.